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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/665,529	09/22/2003	Kohichi Yamauchi	1560-0397P	5921
2292 7590 07/06/2007 BIRCH STEWART KOLASCH & BIRCH PO BOX 747 FALLS CHURCH, VA 22040-0747			EXAMINER DHINGRA, PAWANDEEP	
			ART UNIT 2625	PAPER NUMBER
			NOTIFICATION DATE 07/06/2007	DELIVERY MODE ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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<b>Office Action Summary</b>	Application No. 10/665,529	Applicant(s) YAMAUCHI ET AL.	
	Examiner Pawandeep S. Dhingra	Art Unit 2625	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 22 September 2003.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-5 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-5 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>09/22/2003</u>  | 6) <input type="checkbox"/> Other: _____                          |

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 112***

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claim 4 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 4, recites "transfer unit is rotatable on the rotary fulcrum so that a distance between a first transfer member adjacent to a second transfer member closer to the rotary fulcrum" The purpose and meaning of the whole claim is unclear and is indefinite to the one with the ordinary skill in the art.

Furthermore, the limitation "first transfer member", there is insufficient antecedent basis for this limitation in the claim.

Additionally, claim 4 recites "image carrier corresponding to the first transfer member comes to between 2.5 mm and 4 mm when the transfer unit is separated from the image carriers". It is not clear as to what reference point is distance being compared to? Plus, is that distance needs to be maintained for just a particular image carrier? Due to these reasons, the claim is unclear and is indefinite to the one with the ordinary skill in the art.

Appropriate corrections are required.

***Claim Rejections - 35 USC § 102***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1-2 are rejected under 35 U.S.C. 102(b) as being anticipated by Sasamoto et al., US 6,324,374.

Re claim 1, Sasamoto discloses an image forming apparatus (see abstract) comprising: a plurality of image carriers (see elements 10Y, 10M, 10C, 10B in figure 2) arranged in a sheet transporting direction (see figures 1-2; column 6, lines 19-42); and a transfer unit (see column 6, lines 19-28), which has transfer members (i.e. rollers) corresponding to the respective image carriers (see column 6, lines 19-28), for transferring images carried on the respective image carriers (see abstract, column 6, lines 19-42, and column 10, lines 39-60), wherein the transfer unit has a rotary fulcrum (i.e. pivot subunit) in the vicinity of an extension of the axis of a transfer member (i.e. rollers) located on one end portion in the sheet transporting direction so as to be approximately parallel to the axis (see figures 7-11; column 6, lines 8-17; column 7, lines 37-57; column 12, line 58 – column 13, line 57), and can be rotated on the rotary fulcrum in directions of moving to and from the image carriers (see figures 7-11; column 12, line 58 – column 13, line 57, and claim 7).

Re claim 2, Sasamoto further discloses the transfer members (i.e. rollers) are movable in directions of moving to and from the image carriers (see figures 2, 4, 7-11; column 12, line 58 – column 13, line 57, column 10, line 39 – column 11, line 27, and claim 7).

***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

- (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 3 and 5 are rejected under 35 U.S.C. 103 as being unpatentable over Sasamoto et al., US 6,324,374 in view of Mizoguchi et al., US 6,470,166.

Re claim 3, Sasamoto fails to explicitly disclose the transfer unit includes a supporter for supporting the transfer members, and the supporter has the rotary fulcrum.

However, Mizoguchi et al. discloses the transfer unit (i.e. transfer belt unit, see column 6, lines 50-53) includes a supporter for supporting the transfer members (i.e. transfer rollers), and the supporter has the rotary fulcrum (i.e. rigger 15) (see figures 2-5; column 7, lines 17-30).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention to modify the image forming apparatus as disclosed by Sasamoto to include the image forming apparatus (supporter) as taught by the Mizoguchi for the benefit of "having a structure that minimizes damage in the photosensitive drum and the inter-stage transfer belt due to friction occurring between them" as taught by Mizoguchi at column 3, lines 5-10.

Re claim 5, Sasamoto further discloses a transfer unit (see column 6, lines 19-28) comprising: a plurality of juxtaposed transfer members (see figure 2; column 6, lines 19-42; column 10, line 39 – column 11, line 27). Sasamoto further discloses that the transfer unit has a rotary fulcrum in the vicinity of an extension of the axis of a transfer member located at one end portion in a direction in which the transfer members are juxtaposed, so as to be approximately parallel to the axis (see figures 7-11; column 6, lines 8-17; column 7, lines 37-57; column 12, line 58 – column 13, line 57).

Sasamoto fails to further disclose a supporter for supporting the transfer members so as to be rotatable and movable in a radial direction, wherein the supporter has a rotary fulcrum in the vicinity of an extension of the axis of a transfer member located at one end portion in a direction in which the transfer members are juxtaposed, so as to be approximately parallel to the axis.

However, Mizoguchi et al discloses a supporter for supporting the transfer members (i.e. rollers) so as to be rotatable and movable in a radial direction (see figures

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2-5; column 5, lines 58 – column 7, line 30). Mizoguchi further discloses that supporter is a part of transfer belt unit (see column 6, lines 50-53).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention to modify the image forming apparatus as disclosed by Sasamoto to include the supporter as taught by the Mizoguchi into the transfer unit of Sasamoto to obtain the claimed invention for the benefit of “having a structure that minimizes damage in the photosensitive drum and the inter-stage transfer belt due to friction occurring between them” as taught by Mizoguchi at column 3, lines 5-10.

7. Claim 4 is rejected under 35 U.S.C. 103 as being unpatentable over Sasamoto et al., US 6,324,374 in view of well-known art.

Re claim 4, Sasamoto further discloses the transfer unit (i.e. transfer belt) is rotatable on the rotary fulcrum (i.e. pivot subunit) so that a distance between a first transfer member (i.e. first roller) adjacent to a second transfer member (i.e. second roller) closer to the rotary fulcrum (see figures 7-11; column 12, line 58 – column 13, line 57, and claim 7), and an image carrier (i.e. photoconductive drum) corresponding to the first transfer member (i.e. corresponding roller) comes to a separated position when the transfer unit is separated from the image carriers (see figures 7-11; column 12, line 58 – column 13, line 57).

Sasamoto does not disclose expressly an image carrier corresponding to the first transfer member comes to between 2.5 mm and 4 mm when the transfer unit is separated from the image carriers.

However, at the time of the invention, it would have been obvious to a person of ordinary skill in the art to separate the transfer unit with distance between 2.5 mm and 4 mm from the image carriers. One of ordinary skill in the art, furthermore, would have expected Applicant's invention to perform equally well with Sasamoto's image forming apparatus because Sasamoto's invention provides the same advantages and solves the same problems illustrated by applicant's invention (see Sasamoto, column 7, lines 45-57; column 13, lines 44-57, note that at separated position, the transfer belt only contacts the desired photoconductive element, hence there would be no rubbing between other photoconductor drums and transfer members or an instance of a poor transfer would ever occur).

Therefore, it would have been obvious to combine to one of ordinary skill in this art to modify Sasamoto's invention with well-known art (design choice) to obtain the invention as specified in claim 4.

### ***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Mizoguchi et al., US 6,470,166, see column 6, lines 20-27 teaches "In order to protect drum 5a from damage, the contact position of roller 13Y with belt 3 is shifted from the contact position of drum 5a with belt 3 by distance X. This displacement thus avoids contacting drum 5a with roller 13Y via belt 3"

JP 09-292753, see whole document.



Applicant's disclosure, Description of Related Art section mentions and admits the majority of claimed invention as prior art.

***Contact Information***

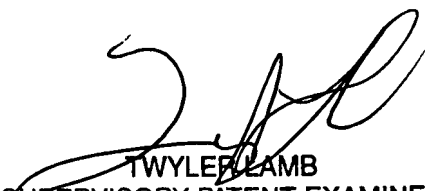
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Pawandeep S. Dhingra whose telephone number is 571-270-1231. The examiner can normally be reached on M-F, 9:30-7:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Twyler Lamb can be reached on 571-272-7406. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

  
Pd

June 20, 2007

  
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SUPERVISORY PATENT EXAMINER